

WHAT IS CLAIMED:

1. A method for persisting an object in a database store, comprising:  
defining a type of an object that can be persisted in the database store, wherein the type definition comprises fields and behaviors; and  
annotating the type definition with attributes that define the storage layout in the database store for instances of the type, wherein the database store uses the annotations in the type definition to control the storage layout of instances of the type in the database store.
2. The method recited in claim 1, wherein said step of annotating the type definition comprises:  
annotating each field of the type with a first attribute that controls one or more storage facets of the field; and  
annotating each behavior with a second attribute that denotes an equivalent structural access path.
3. The method recited in claim 1, wherein the storage facets of the field that are controlled by the first attribute comprise at least one of the maximum size of the field, whether or not the field is fixed length, the precision of the field, the scale of the field, and whether values of the field can be null.
4. The method recited in claim 2, wherein the second attribute specifies the name of a field of the type that is the subject of the behavior.
5. The method of claim 1, wherein the object type is defined as a class in managed code.
6. In a system in which an object that is an instance of a user defined type is persisted in a database store, wherein a definition of the user defined type comprises one or more fields and behaviors and includes annotations that control a storage layout for instances of the type in the database store, and wherein the database store maintains information reflecting the storage layout as provided by the annotations to the type definition, a method of executing a query on an object that is an instance of the type, the method comprising:

receiving a query on an object that is an instance of the type, wherein execution of the query may require hydration of the object;

accessing the information maintained by the database store to determine the storage layout of instances of the type;

translating the query into an equivalent structural access path for a value of a field of the type that is to be returned in response to the query, based on the information about the storage layout of instances of the type;

structurally accessing the value without hydrating the object; and

returning the value in response to the query.

7. The method recited in claim 6, wherein each field of the type is annotated with a first attribute that controls one or more storage facets of the field, and wherein each behavior is annotated with a second attribute that denotes an equivalent structural access path.

8. The method recited in claim 6, wherein the storage facets of the field that are controlled by the first attribute comprise at least one of the maximum size of the field, whether or not the field is fixed length, the precision of the field, the scale of the field, and whether values of the field can be null.

9. The method recited in claim 7, wherein the second attribute specifies the name of a field of the type that is the subject of the behavior.

10. The method of claim 6, wherein the object type is defined as a class in managed code.

11. A system comprising:

a database store in which an object that is an instance of a user defined type is persisted, wherein a definition of the user defined type comprises one or more fields and behaviors and includes annotations that control a storage layout for instances of the type in the database store, and wherein the database store maintains information reflecting the storage layout as provided by the annotations to the type definition; and

a database server that (i) receives a query on an object that is an instance of the user defined type, wherein execution of the query may require hydration of the object, (ii) accesses the information maintained by the database store to determine the storage layout of instances of

the type, (iii) translates the query into an equivalent structural access path for a value of a field of the type that is to be returned in response to the query, based on the information about the storage layout of instances of the type, (iv) structurally accesses the value without hydrating the object, and (v) returns the value in response to the query.

12. The system recited in claim 11, wherein each field of the type is annotated with a first attribute that controls one or more storage facets of the field, and wherein each behavior is annotated with a second attribute that denotes an equivalent structural access path.

13. The system recited in claim 12, wherein the storage facets of the field that are controlled by the first attribute comprise at least one of the maximum size of the field, whether or not the field is fixed length, the precision of the field, the scale of the field, and whether values of the field can be null.

14. The system recited in claim 12, wherein the second attribute specifies the name of a field of the type that is the subject of the behavior.

15. The system recited in claim 11, wherein the object type is defined as a class in managed code.

16. A computer readable medium having program code stored thereon for use in a system in which an object that is an instance of a user defined type is persisted in a database store, wherein a definition of the user defined type comprises one or more fields and behaviors and includes annotations that control a storage layout for instances of the type in the database store, and wherein the database store maintains information reflecting the storage layout as provided by the annotations to the type definition, said program code, when executed on a computer, causing the computer to:

receive a query on an object that is an instance of the type, wherein execution of the query may require hydration of the object;

access the information maintained by the database store to determine the storage layout of instances of the type;

translate the query into an equivalent structural access path for a value of a field of the type that is to be returned in response to the query, based on the information about the storage layout of instances of the type;

structurally access the value without hydrating the object; and  
return the value in response to the query.

17. The computer readable medium recited in claim 16, wherein each field of the type is annotated with a first attribute that controls one or more storage facets of the field, and wherein each behavior is annotated with a second attribute that denotes an equivalent structural access path.

18. The computer readable medium recited in claim 16, wherein the storage facets of the field that are controlled by the first attribute comprise at least one of the maximum size of the field, whether or not the field is fixed length, the precision of the field, the scale of the field, and whether values of the field can be null.

19. The computer readable medium recited in claim 17, wherein the second attribute specifies the name of a field of the type that is the subject of the behavior.

20. The computer readable medium of claim 16, wherein the object type is defined as a class in managed code.